

NIGHTINGALE, A. et al.
Appl. No. 10/802,032
January 24, 2008

AMENDMENTS TO THE DRAWINGS

Included with this amendment are formal drawings.

Attachment: Replacement Sheets

REMARKS

Reconsideration and allowance are respectfully requested.

Formal drawings are attached as replacement sheets. Approval and withdrawal of the drawings objections are requested.

The abstract is amended to be less than 150 words. Withdrawal of the objection is requested.

Claims 1-46 stand rejected under 35 U.S.C. §101 as being directed to non-statutory subject matter. This rejection is respectfully traversed.

Claim 1 has been amended to indicate that the revised timing information that is generated is “machine-readable” and that the revised timing information is “for use in correcting said anticipated timing information as part of simulation output results.” In a telephone interview conducted on January 23, 2008 with Examiner Janakiraman, the Examiner indicated that these amendments would likely be sufficient to define a practical application and to overcome the rejection under 35 USC §101. Similar amendments have been made to claims 29 and 46. In addition, claim 29 now recites an apparatus that comprises “a computer for executing a plurality of software models.” Claim 46 now recites a “computer program storage medium storing a computer program for simulation for simulating the operation of a data processing apparatus.” Accordingly, all claims recite statutory subject matter, and the rejection under 35 USC §101 should be withdrawn.

Claims 1-46 stand rejected under 35 U.S.C. §103 as being obvious based on Fischer and Thekkath. This rejection is respectfully traversed.

Fischer describes an asynchronous network that adjusts the timing of data transmission so as to adapt to the network load. This adjustment takes place for future transactions based upon

the result of preceding transactions. Fischer is not concerned with simulating the operation of a data processing apparatus, which is what the independent claims of the present application are directed to. In those independent claims, the revised timing information relates to “those data transfers” that the anticipated timing information indicates are concurrent. A basic goal in the claimed simulation is to identify problem timing conditions like concurrent transactions that are not correctly modeled by the anticipated timing information. The timing for these concurrent transactions is revised so that the modeled behavior accurately identifies any problems if they are present. In contrast, Fischer’s adjusting the timing of future transactions based upon the performance of preceding transactions is not useful in the simulation field to which the present claims are directed.

Thekkath discloses a system with a bus arbiter. The Examiner refers to col. 5, lines 29-37, but applicants do not see where this text describes simulating the operation of a data processing apparatus. Nor does Thekkath describe generating anticipated timing data or generation of revised timing data because the role of Thekkath’s arbiter is to prevent bus transactions from ever overlapping as this would cause a real physical malfunction. Indeed, the language referenced in Thekkath by the Examiner in the action on pages 5-6 confirms this point, e.g., “Thekkath teaches that transaction interference on a bus would be avoided...using arbitration logic” and “preclude bus contentions.”

It is not clear how the teaching of Fischer would be combined with Thekkath. Fischer concerns a large asynchronous network which is many-layered, defuse, and unpredictable. Why would one of ordinary skill in the art want to add Thekkath’s arbiter into Fischer’s system? The defuse and multi-layered nature of the network in Fischer means that it would be subjective to place an arbiter at any particular point. Fischer concerns a much higher level type of network

control than the low level physical control provided by an arbiter. There is no logical reason why one of ordinary skill in the art would consider the physical level of the arbiter of Thekkath as solving any particular problem or giving any particular advantage with the problems addressed in Fischer.

The independent claims of the present application concern a *simulation* system in which anticipated timing information is generated, potential overlaps are detected, and then revised timing information is generated when overlaps occur. The advantage of this arrangement is that the slow and computationally-intensive detailed timing analysis for dealing with overlapping transactions in the *simulation* of a data processing device need only be performed when such overlapping transactions actually occur. The simulation is safe and accurate as it does not ignore the issue of overlapping transactions, and yet it is quicker because it does not need to model bus transactions at a highly detailed level unless this is actually necessary.

In Fischer, there is no simulation and no modification of anticipated timing information for transactions so as to generate revised timing information for those same transactions. The arbiter in Thekkath ensures that overlapping transactions do not occur, and accordingly, there is no generation of anticipated timing information indicative of overlapping transactions followed by the generation of revised timing information as in the independent claims. Thus, even if Thekkath and Fischer were combined, even though there is no reason to do so, at best the result would be a system where no overlapping transactions would occur because any overlapping transaction would be prevented by Thekkath's arbiter. As a result, there would be no anticipated timing information which was generated for a particular transaction that is used to identify an overlap that then requires revision for that same transaction.

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The obviousness rejection should be withdrawn because the proposed combination of Fischer and Thekkath fails to teach all the features recited in the independent claims and because there is no reason why a person of ordinary skill in the art would combine them.

The application is in condition for allowance. An early notice to that effect is earnestly solicited.

Respectfully submitted,

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